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Kasenge and Ujiji. No details of his return journey have been received as yet. He is known, however, to have followed the Lukuga for many days on its course to the Lualaba or Congo. He then returned by the lake to his camp, and finally reached the coast by a new route past the unvisited Lake Hikwa.

At the same time that Mr. Thomson was crossing from Nyassa to Tanganyika, the journey was being made by Mr. James Stewart, of the Mission station at Livingstonia. He left the former lake at Kambwe lagoon about twenty-five miles south-west from Mbungo, on October 14, 1879.

The ascent to the plateau was not so steep here as the R. G. S. expedition found it to be, and was accomplished in two days, when the elevation of 3900 feet was attained. Continuing to keep to the south-west of the route of Thomson, he found the average elevation of the plateau 4700 feet. The rain fall of the country is large, and its climate cool and bracing. The route over this plateau was a remarkably easy one, gradually rising from 3900 feet to 5400 at the ridge overlooking Tanganyika, and there is not one difficult ascent. The descent to the lake is gradual, and took two days. The distance from Kambwe lagoon to Pambete was found to be 254 miles. Here he met Mr. Thomson and remained with him until his departure, when Mr. Stewart returned to Nyassa, reaching it again on December 3d. The homeward march was only 232 miles in length, and could be shortened probably to 210.

In Chungu he found the trees thickly covered with large caterpillars three or four inches long and as thick as the fore finger. The natives were gathering them in great numbers, to preserve them for food. One kind was a light pea-green color, the other dark with white spots and sharp spines on the back.

MICROSCOPY.[1]

PERMANENT MICROSCOPIC PREPARATIONS OF PLASMODIUM.—Mr. S. H. Gage advises picric acid as a means of hardening this interesting motile form of the Myxomycetes, without change of color as by osmic acid, or shrinkage and change of color by drying. Pieces of rotten wood containing plasmodium are placed on moistened microscopic slides, taking care that some of the protoplasm touches the slide, and the whole placed under cover to prevent drying. In an hour or so any plasmodium that may have crawled out upon the slide, may be fixed by placing the slide a few minutes in a mixture of equal parts of ninety-five per cent. alcohol and a saturated aqueous solution of picric acid. Yellow plasmodium may then be at once mounted, through absolute alcohol in balsam; but white forms should be first bleached in twenty-five per cent. alcohol.

[1] This department is edited by Dr. R. H. Ward, Troy, N. Y.

PERMANENT MICROSCOPIC PREPARATIONS OF AMPHIBIAN BLOOD.—The very excellent method of drying the corpuscles of mammalian blood on the microscopic slide, is not applicable to the much more bulky corpuscles of Amphibia. The corpuscles of the latter are sure to be distorted and seamed in drying; hence various methods of preserving the corpuscles moist have been tried with varying success.

The following very great modification of the method proposed by Ranvier in his treatise on histology,[1] has been in use for some time in the Anatomical Laboratory of Cornell University, and has given uniformly excellent results. Preparations made three years ago are quite as good as at first.

Three or four drops of fresh blood are allowed to fall into 10 cc. of normal salt solution (common salt 750 milligrams, water 100 cc.) preferably contained in a high narrow vessel like a graduate glass or beaker. The mixture of blood and salt solution should be well agitated and then 100 cc. of a saturated aqueous solution of picric acid added with constant stirring. After the corpuscles have settled, as much of the supernatant liquid as possible is poured off, and in its place is put about an equal volume of normal salt solution. The corpuscles are allowed to settle, the liquid poured off and another volume of salt solution added. This is continued until the salt solution acquires only a faint yellow tinge.

The use of the salt solution is, first, to dilute the blood in order to avoid distortion of the corpuscles, and second, to wash away the picric acid so that the subsequent staining will be more satisfactory.

After pouring off the last salt solution, there is put in its place 10 cc. of a mixture of five parts of Frey's carmine and ninety-five parts of picrocarmine. The corpuscles will stain in from one to fifteen hours. A drop of the agitated mixture should be examined occasionally to ascertain when the staining is sufficient. The nucleus should be deep red, and the body of the corpuscle yellow or pinkish.

When the staining is completed, as much stainer as possible should be poured off, and in its place 10 or 15 cc. of acid glycerine (glycerine 100 cc., acetic or formic acid 1 cc.). This mixture of corpuscles and glycerine may be placed in a bottle and used at any time, it being simply necessary to agitate the mixture slightly or to take up some of the sediment with a pipette and mount it precisely as any other glycerine preparation.

Summary.—1. The fresh blood is first diluted with about fifty times its volume of normal salt solution.

2. To this diluted blood is added ten times as great a volume of a saturated aqueous solution of picric acid.

3. The picric acid is washed away with normal salt solution.

[1] Traité technique de Histologie, p. 195.

4. The corpuscles are stained with picrocarmine, or a mixture of this and Frey's carmine.

5. They are preserved in acid glycerine, and may be mounted for the microscope at any time.—*Read at the sub-section of Microscopy of the A. A. A. S., by Simon H. Gage, Ithaca, N. Y.*

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SCIENTIFIC NEWS.

— The U. S. Entomological Commission had a prolonged session in June, immediately after the adjournment of Congress, and since then the members and their assistants have been in the field. As during the previous year the labor was divided, so that Prof. Riley took charge of the cotton worm investigation, while Profs. Packard and Thomas prosecuted the study of the Rocky Mountain locust in the Western Territories.

The organization of Prof. Riley's parties is as follows:

Prof. Stelle proceeded to Texas, making his headquarters somewhere in the Colorado Bottom, where he was assisted by Judge W. J. Jones, of Virginia Point, near Galveston.

Prof. Barnard made his headquarters at Vidalia, Louisiana, so as to fully study those portions of Louisiana and Mississippi which were neglected in 1878 and 1879 on account of yellow fever.

In Mississippi, Prof. R. W. Jones, of the State University, assisted by Dr. E. H. Anderson, of Kirkwood, and Mr. Lawrence Johnson, of Holly Springs, represented the Commission among the cotton lands of that State.

In Alabama, Judge J. F. Bailey, of Marion, assisted by Mr. James Roane, chemist, of Georgetown, D. C., made a special series of experiments.

In Georgia, Prof. J. E. Willet, of Mercer College, made a series of experiments to test the usefulness of fungus germs in the destruction of the worm, having the aid and advice of W. G. Farlow, professor of cryptogamic botany at Harvard, who has been employed by the Commission to study this subject.

In Florida, Mr. H. G. Hubbard, a well-known entomologist of Detroit, Michigan, who has been for some time stationed at Crescent City, is making a series of practical observations and experiments, having his headquarters at Tallahassee.

Prof. Smith was occupied more particularly with the preparation of maps showing the different cotton regions, and indicating a new classification of the cotton belt with reference to the hibernation of the insect.

Mr. E. A. Schwarz, who has been associated with Prof. Riley from the beginning of the investigation, and Mr. W. H. Patton, an experienced entomologist of Connecticut, remained at the headquarters of the Commission in Washington during Prof. Riley's